

Remarks

Claims Status

Claims 1-5, 7-17, 19, 21 and 28-30 are currently pending.

Claim 28 is amended herein to correct a typographical error.

Claim Objection

In the June 24, 2003 Office Action, claim 28 was objected to because of a typographical error to which applicant has responded by correction of same.

Rejection Pursuant to 35 U.S.C. § 103(a)

In the June 24, 2003 Office Action, the following rejections were set forth:

claims 1-4, 7-17, 19, 21, 27 and 28-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 5,461,308 (hereinafter referred to as "Jin") in view of 5,487,356 (hereinafter referred to as "Li"); and

claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Jin in view Li and in further view of U.S. Patent No. 6,010,969 (hereinafter referred to as "Vaartstra") and U.S. Patent No. 5, 659,101 (hereinafter referred to as "Biagini").

Applicant respectfully traverses the rejections and requests reconsideration of all pending claims based on the ensuing remarks.

Jin, teaches a method of forming a $(La_{0.67}Ca_{0.33})MnO_x$ magnetoresistive material by laser ablation using a 12 mm diameter x 5 mm thick target of the same composition (see column 2, lines 25-29).

Li, is directed to a chemical vapor deposition method of forming films showing a giant magnetoresistance, wherein such films are described as $(La_{1-x}A_x)MnO_3$, where $x + y = 1$. Li, further

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discloses that films having the formula $(\text{La}_{0.72}\text{Ca}_{0.28})\text{MnO}_3$ are known in the art to exhibit a GMR effect and have been previously deposited by PVD methods.

The present invention, as delineated in applicant's independent claim 1, is directed to a liquid delivery, chemical vapor deposition (CVD) method of making A-site deficient manganate materials having, the general formula $\text{La}_x\text{M}_y\text{MnO}_3$, where M = Mg, Ca, Sr, or Ba, a Curie temperature that is between 273 K and 334 K, and $0.5 < (x+y) < 0.9$. The thin film manganate materials of the present invention were heretofore unknown, (See applicant's priority patent application, U.S. Application Serial No. 08/825,480, now U.S. Patent No. 6,117,571), as was the corresponding process, now claimed by applicant, to manufacture such films.

In section 9 of the present June 24, 2003 Office Action, Examiner Markham set forth that,

Jin et al. teaches a method of forming magnetoresistive, doped manganate material "21" on a substrate "20" by a technique such as chemical vapor deposition, the manganate material having the general formula $\text{A}_w\text{B}_x\text{C}_y\text{O}_z$, where A is preferably La; B is preferably Mg, Ca, Sr, or Ba; C is preferably Mn; $0.5 \leq w \leq 0.7$; $0.15 \leq x \leq 0.50$; $0.8 \leq y \leq 1.2$; and $2.7 \leq z \leq 3.3$. The materials taught by Jin et al. have a Curie temperature of greater than or equal to 330K.

Applicant submits that Jin provides no basis or evidence for teaching materials having Curie temperatures of greater than or equal to 330K. What Jin actually teaches at column 3, lines 29-31 is,

Thus for room temperature operation, the material should have a Curie temperature $\geq 330^\circ\text{K}$.

According to MPEP 2142:

To establish a *prima facie* case of obviousness, *three* basic criteria *must* be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

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Jin fails to teach any process for making a manganate thin film having a Curie temperature that is at or above room temperature. Moreover, neither Jin nor Li singly or in combination teach a process for making A-site deficient manganate thin films having Curie temperatures that are at or above room temperature, as neither Jin nor Li teach or suggest the existence of A-site deficient manganate thin films. And as neither Jin nor Li teach or suggest the existence of A-site deficient manganate thin films having Curie temperatures that are at or above room temperature, the references do not teach or suggest all claim limitations. Thus, a reasonable expectation of success based on their combination can not be met.

Accordingly, on the aforementioned basis, applicant respectfully submits that the present obviousness rejection based on Jin in view of Li is improper and therefore requests reconsideration of claims 1-4, 7-17, 19, 21, 27 and 28-30 and withdrawal of the present rejection under 35 U.S.C. § 103(a).

With respect to the rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Jin in view of Li and in further view of Vaartstra and Biagini, applicant submits that the references whether considered alone or in combination fail to teach or suggest all elements of the claim. Specifically and as outlined hereinabove, the references fail to teach or suggest, **a method of forming a doped A-site deficient $\text{La}_x\text{M}_y\text{MnO}_3$, (where M = Mg, Ca, Sr, or Ba and $0.5 < (x+y) < 0.9$) manganate material on a substrate having a Curie temperature that is between 273 K and 334 K.** Thus, a reasonable expectation of success based on their combination can not be met.

Accordingly, on the aforementioned basis, applicant respectfully submits that the present obviousness rejection based on Jin in view of Li and in further view of Vaartstra and Biagini, is improper and therefore requests reconsideration of claim 5 and the withdrawal of the present rejection under 35 U.S.C. § 103(a).

Petition Under 37 CFR 1.136 for Three Month Extension of Time

Petition hereby is made under the provisions of 37 CFR 1.136 for a three month extension of the term for response to the June 24, 2003 Office Action, extending the term for response to December 24, 2003.

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Fees Due and Payable

In connection with the instant Petition Under 37 CFR 1.136 for Three Month Extension of Time, a fee of \$950 as specified in 37 CFR 1.17(a)(3), is hereby authorized to be deducted from the Deposit Account No. 50-0860 in the name of applicant, Advanced Technology Materials, Inc., 7 Commerce Drive, Danbury, CT 06810.

Should the Office determine any additional fees are due in connection with the entry of this amendment, the Office is hereby authorized to deduct such fee from the above-identified deposit account.

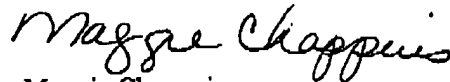
Conclusion

With this amendment all issues of allowability of the instant application are respectfully submitted to be resolved favorably to applicant.

It therefore is requested that the Examiner responsively issue a Notice of Allowability for claims 1-5, 7-17, 19, 21 and 28-30, so that the application can be passed to issue at an early date.

If any issues remain, incident to formal allowance of the application, the Examiner is requested to contact the undersigned agent at (203) 794-1100 ext 4184 to resolve same.

Respectfully submitted,



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